```
SSSSSSSSSSS   YYY         YYY   SSSSSSSSSSS   LLL                   000000000       AAAAAAAAA
SSSSSSSSSSS   YYY         YYY   SSSSSSSSSSS   LLL                   000000000       AAAAAAAAA
SSSSSSSSSSS   YYY         YYY   SSSSSSSSSSS   LLL                   000000000       AAAAAAAAA
SSS           YYY         YYY   SSS           LLL                000       000    AAA       AAA
SSS           YYY         YYY   SSS           LLL                000       000    AAA       AAA
SSS             YYY     YYY     SSS           LLL                000       000    AAA       AAA
SSS             YYY     YYY     SSS           LLL                000       000    AAA       AAA
SSS               YYY YYY       SSS           LLL                000       000    AAA       AAA
   SSSSSSSS         YYY         SSSSSSSS      LLL                000       000    AAA       AAA
   SSSSSSSS         YYY         SSSSSSSS      LLL                000       000    AAA       AAA
   SSSSSSSS         YYY         SSSSSSSS      LLL                000       000    AAAAAAAAAAAAAA
          SSS       YYY                SSS    LLL                000       000    AAAAAAAAAAAAAA
          SSS       YYY                SSS    LLL                000       000    AAA       AAA
          SSS       YYY                SSS    LLL                000       000    AAA       AAA
          SSS       YYY                SSS    LLL                000       000    AAA       AAA
          SSS       YYY                SSS    LLL                000       000    AAA       AAA
SSSSSSSSSSS         YYY         SSSSSSSSSSS   LLLLLLLLLLLLLLL       000000000       AAA       AAA
SSSSSSSSSSS         YYY         SSSSSSSSSSS   LLLLLLLLLLLLLLL       000000000       AAA       AAA
SSSSSSSSSSS         YYY         SSSSSSSSSSS   LLLLLLLLLLLLLLL       000000000       AAA       AAA
```

```
  CCCCCCC           JJ   FFFFFFFFFF   CCCCCCC  LL          UU      UU   SSSSSSSS   TTTTTTTTTT   RRRRRRRR
  CCCCCCC           JJ   FFFFFFFFFF   CCCCCCC  LL          UU      UU   SSSSSSSS   TTTTTTTTTT   RRRRRRRR
CC                  JJ   FF           CC       LL          UUU     UUU       SS         TT      RR      RR
CC                  JJ   FF           CC       LL          UUU     UUU       SS         TT      RR      RR
CC                  JJ   FF           CC       LL          UUU     UUU       SS         TT      RR      RR
CC                  JJ   FF           CC       LL          UUU     UUU       SS         TT      RR      RR
CC                  JJ   FFFFFFF      CC       LL          UUU     UUU   SSSSSS         TT      RRRRRRRR
CC                  JJ   FFFFFFF      CC       LL          UUU     UUU   SSSSSS         TT      RRRRRRRR
CC            JJ    JJ   FF           CC       LL          UUU     UUU       SS         TT      RR  RR
CC            JJ    JJ   FF           CC       LL          UUU     UUU       SS         TT      RR  RR
CC            JJ    JJ   FF           CC       LL          UUU     UUU       SS         TT      RR    RR      ....
CC            JJ    JJ   FF           CC       LL          UUU     UUU       SS         TT      RR    RR      ....
  CCCCCCC   JJJJJ        FF           CCCCCCC  LLLLLLLLLL  UUUUUUUUUU   SSSSSSSS        TT      RR      RR    ....
  CCCCCCC   JJJJJ        FF           CCCCCCC  LLLLLLLLLL  UUUUUUUUUU   SSSSSSSS        TT      RR      RR    ....

LL               IIIIII     SSSSSSSS
LL               IIIIII     SSSSSSSS
LL                 II     SS
LL                 II     SS
LL                 II     SS
LL                 II     SS
LL                 II       SSSSSS
LL                 II       SSSSSS
LL                 II            SS
LL                 II            SS
LL                 II            SS
LL                 II            SS
LLLLLLLLLL       IIIIII     SSSSSSSS
LLLLLLLLLL       IIIIII     SSSSSSSS
```

CJFCLUSTR
V04-000

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- Minimal Cluster CJF Support   16-SEP-1984 00:23:05 VAX/VMS Macro V04-00   Page 1
                                        5-SEP-1984 04:06:52 [SYSLOA.SRC]CJFCLUSTR.MAR;1   (1)

```
0000    1                    .TITLE  CJFCLUSTR - Minimal Cluster CJF Support
0000    2                    .IDENT  'V04-000'
0000    3
0000    4
0000    5          ;******************************************************************
0000    6          ;*                                                                *
0000    7          ;*  COPYRIGHT (c) 1978, 1980, 1982, 1984 BY                       *
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0000   19          ;*  AND  SHOULD  NOT  BE  CONSTRUED AS  A COMMITMENT BY DIGITAL EQUIPMENT   *
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0000   23          ;*  SOFTWARE ON EQUIPMENT WHICH IS NOT SUPPLIED BY DIGITAL.        *
0000   24          ;*                                                                *
0000   25          ;*                                                                *
0000   26          ;******************************************************************
0000   27          ;
0000   28
0000   29          ;++
0000   30          ; FACILITY: EXECUTIVE, CLUSTER MANAGEMENT
0000   31          ;
0000   32          ; ABSTRACT:
0000   33          ;       This module contains the minimal Common Journaling Facility support
0000   34          ;       for a cluster environment.
0000   35          ;
0000   36          ; ENVIRONMENT: VAX/VMS
0000   37          ;
0000   38          ; AUTHOR: Ralph Weber,          CREATION DATE: 31-March-1983
0000   39          ;
0000   40          ; MODIFIED BY:
0000   41          ;
0000   42          ;
0000   43          ;--
0000   44
```

```
             0000      46            .SBTTL  DECLARATIONS
             0000      47   ;
             0000      48   ; INCLUDE FILES:
             0000      49   ;
             0000      50            $CDRPDEF                          ; CDRP offsets
             0000      51            $CLSMSGDEF                        ; Cluster message offsets
             0000      52            $CLUBDEF                          ; Cluster block
             0000      53            $CSBDEF                           ; Cluster system block
             0000      54            $IPLDEF                           ; Processor IPL definitions
             0000      55            $PDTDEF                           ; Port descrpitor table
             0000      56            $SSDEF                            ; System status codes
             0000      57
             0000      58   ;
             0000      59   ; MACROS:
             0000      60   ;
             0000      61
             0000      62   ;
             0000      63   ; EQUATED SYMBOLS:
             0000      64   ;
             0000      65
             0000      66   ;
             0000      67   ; OWN STORAGE:
             0000      68   ;
             0000      69
             0000      70
             0000      71   ;********************************************************************
             0000      72   ;
             0000      73   ; NOTE: The following assumptions are in effect for this entire module.
             0000      74   ;
             0000      75   ;********************************************************************
             0000      76
             0000      77            ASSUME  IPL$_SYNCH  EQ  IPL$_SCS
             0000      78
             0000      79            .DEFAULT          DISPLACEMENT,WORD
             0000      80
          00000000     81            .PSECT  $$$100,LONG
```

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CJFCLUSTR   - Minimal Cluster CJF Support   16-SEP-1984 00:23:05 VAX/VMS Macro V04-00   Page 3
V04-000   CJF$MIN_JOURNAL - Minimum Journal Messag 5-SEP-1984 04:06:52 [SYSLOA.SRC]CJFCLUSTR.MAR;1   (3)

```
                                          0000      83                    .SBTTL  CJF$MIN_JOURNAL - Minimum Journal Message Processor
                                          0000      84
                                          0000      85   ;++
                                          0000      86   ;
                                          0000      87   ; Functional Description:
                                          0000      88   ;
                                          0000      89   ;       When no real journal message dispatcher exists, this routine processes
                                          0000      90   ;       all incomming journaling messages.  If no response is required, the
                                          0000      91   ;       message is ignored.  If a response is required, a response with a
                                          0000      92   ;       status of SS$_NOSUCHNODE is returned.
                                          0000      93   ;
                                          0000      94   ; Inputs:
                                          0000      95   ;
                                          0000      96   ;       R2       Address of message
                                          0000      97   ;       R3       Senders CSB
                                          0000      98   ;       R4       Address of PDT
                                          0000      99   ;       R5       Address of a CDRP (if response required)
                                          0000     100   ;
                                          0000     101   ; Outputs:
                                          0000     102   ;
                                          0000     103   ;       CJMSG$Q_STATUS(R2) = SS$_NOSUCHNODE in a response message
                                          0000     104   ;--
                                          0000     105
                                          0000     106   CJF$MIN_JOURNAL::
                                          0000     107
                        04 A2    D5       0000     108                    TSTL    CLSMSG$L_RSPID(R2)              ; Is a response required?
                           1D    13       0003     109                    BEQL    70$                            ; Branch if no response.
                                          0005     110
                      FFF8'    30         0005     111                    BSBW    CNX$INIT_CDRP                  ; Initialize supplied CDRP.
           2C A5      09 A2    90         0008     112                    MOVB    CLSMSG$B_FUNC(R2), -           ; Save incomming function code
                                000D      113                                     CDRP$L_VAL1(R5)               ; for the response.
           4C A5      25'AF    9E         000D     114                    MOVAB   B^CJF$MIN_BUILD, -             ; Set address of minimum build
                                0012      115                                     CDRP$L_MSGBLD(R5)             ; message routine in CDRP.
              53      4C A3    D0         0012     116                    MOVL    CSB$L_CSID(R3), R3            ; Get CSID from CSB.
                      FFE7'    30         0016     117                    BSBW    CNX$SEND_MSG_RESP             ; Send the response message.
              50      55       D0         0019     118                    MOVL    R5, R0                        ; Setup CDRP for deallocation.
        00000000'GF    17      001C      119                    JMP     G^EXE$DEANONPAGED            ; Deallocate CDRP and return.
                                0022      120
                                0022      121                                                                  ; No response required.
                      FFDB'    31         0022     122   70$:             BRW     CNX$DEALL_MSG_BUF_CSB        ; Deallocate message buffer
                                0025      123                                                                  ; and return to caller.
```

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- Minimal Cluster CJF Support   16-SEP-1984 00:23:05 VAX/VMS Macro V04-00   Page 4
CJF$MIN_BUILD - Minimum CJF Message Buil 5-SEP-1984 04:06:52 [SYSLOA.SRC]CJFCLUSTR.MAR;1   (4)

```
                          0025  125              .SBTTL  CJF$MIN_BUILD - Minimum CJF Message Build Routine
                          0025  126
                          0025  127  ;++
                          0025  128  ;
                          0025  129  ; Functional Description:
                          0025  130  ;
                          0025  131  ;       This routine is called by the acknowledged message services to build a
                          0025  132  ;       minimum CJF response message.  It is called as many times as needed to
                          0025  133  ;       successfully transfer the message.
                          0025  134  ;
                          0025  135  ; Inputs:
                          0025  136  ;
                          0025  137  ;       R2      Address of message
                          0025  138  ;       R3      Address of CSB
                          0025  139  ;       R4      Address of PDT
                          0025  140  ;       R5      Address of CDRP
                          0025  141  ;
                          0025  142  ; Outputs:
                          0025  143  ;
                          0025  144  ;       Minimal CJF response message built in message buffer pointed to by R2.
                          0025  145  ;
                          0025  146  ;--
                          0025  147
                          0025  148  CJF$MIN_BUILD:
                          0025  149
  08 A2   83 8F   90      0025  150              MOVB    #<CLSMSG$M_RESPMSG -          ; Build a response CJF facility
                          002A  151                      ! CLSMSG$K_FAC_CJF>, -        ; code.
                          002A  152                      CLSMSG$B_FACILITY(R2)
  09 A2   2C A5   90      002A  153              MOVB    CDRP$L_VAL1(R5), -            ; Return function code from
                          002F  154                      CLSMSG$B_FUNC(R2)            ; incomming message.
  0C A2  028C 8F   3C     002F  155              MOVZWL  #SS$_NOSUCHNODE, -           ; Set error status which
                          0035  156                      CJMSG$Q_STATUS(R2)          ; signals no journal driver
          10 A2   D4      0035  157              CLRL    CJMSG$Q_STATUS+4(R2)        ; here.
                          0038  158
                  05      0038  159              RSB                                  ; Return.
```

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CJFCLUSTR   - Minimal Cluster CJF Support   16-SEP-1984 00:23:05 VAX/VMS Macro V04-00   Page   5
VO4-000   CJF$DISPATCH - First Level CJF Dispatch   5-SEP-1984 04:06:52 [SYSLOA.SRC]CJFCLUSTR.MAR;1   (5)

```
                           0039  161                    .SBTTL  CJF$DISPATCH - First Level CJF Dispatch Routine
                           0039  162
                           0039  163  ;++
                           0039  164  ;
                           0039  165  ;  Functional Description:
                           0039  166  ;
                           0039  167  ;          This routine is the target of the first level received-new-message
                           0039  168  ;          dispatcher.  In turn, this routine dispatches through the CLUB to the
                           0039  169  ;          second level dispatcher in the journal driver or to CJF$MIN_JOURNAL if
                           0039  170  ;          the journal driver is not yet loaded.
                           0039  171  ;
                           0039  172  ;  Inputs:
                           0039  173  ;
                           0039  174  ;          R2      Address of message
                           0039  175  ;          R3      Senders CSB
                           0039  176  ;          R4      Address of PDT
                           0039  177  ;
                           0039  178  ;  Outputs:
                           0039  179  ;
                           0039  180  ;          R0      Destroyed
                           0039  181  ;          R2      Address of message (unchanged)
                           0039  182  ;          R3      Senders CSB (unchanged)
                           0039  183  ;          R4      Address of PDT (unchanged)
                           0039  184  ;--
                           0039  185  ;--
                           0039  186
                           0039  187  CJF$DISPATCH::
                           0039  188
50    00000000'GF    DO    0039  189          MOVL    G^CLU$GL_CLUB, R0        ; Get CLUB address.
           14 BO    17    0040  190          JMP     @CLUB$L_JNL_DISPT(R0)    ; Forward first level dispatch
                           0043  191                                          ; to journal driver or
                           0043  192                                          ; CJF$MIN_JOURNAL.
                           0043  193
                           0043  194          .END
```

```
CDRP$L_MSGBLD               = 0000004C
CDRP$L_VAL1                 = 0000002C
CJF$DISPATCH                  00000039 RG    02
CJF$MIN_BUILD                 00000025 R     02
CJF$MIN_JOURNAL               00000000 RG    02
CJMSG$Q_STATUS              = 0000000C
CLSMSG$B_FACILITY           = 00000008
CLSMSG$B_FUNC               = 00000009
CLSMSG$K_FAC_CJF            = 00000003
CLSMSG$L_RSPID              = 00000004
CLSMSG$M_RESPMSG            = 00000080
CLU$GL_CLUB                   ********  X    02
CLUB$L_JNL_DISPT            = 00000014
CNX$DEALL_MSG_BUF_CSB         ********  X    02
CNX$INIT_CDRP                 ********  X    02
CNX$SEND_MSG_RESP             ********  X    02
CSB$L_CSID                  = 0000004C
EXE$DEANONPAGED               ********  X    02
IPL$_SCS                    = 00000008
IPL$_SYNCH                  = 00000008
SS$_NOSUCHNODE              = 0000028C
```

```
                             +------------------+
                             ! Psect synopsis   !
                             +------------------+
```

PSECT name	Allocation	PSECT No.	Attributes										
. ABS .	00000000 (0.)	00 (0.)	NOPIC	USR	CON	ABS	LCL NOSHR	NOEXE	NORD		NOWRT	NOVEC	BYTE
ABS	00000000 (0.)	01 (1.)	NOPIC	USR	CON	ABS	LCL NOSHR	EXE	RD		WRT	NOVEC	BYTE
$$$100	00000043 (67.)	02 (2.)	NOPIC	USR	CON	REL	LCL NOSHR	EXE	RD		WRT	NOVEC	LONG

```
                        +--------------------------+
                        ! Performance indicators   !
                        +--------------------------+
```

Phase	Page faults	CPU Time	Elapsed Time
Initialization	36	00:00:00.06	00:00:00.41
Command processing	146	00:00:00.46	00:00:02.62
Pass 1	341	00:00:07.18	00:00:24.24
Symbol table sort	2	00:00:01.31	00:00:05.72
Pass 2	51	00:00:01.21	00:00:04.67
Symbol table output	4	00:00:00.03	00:00:00.03
Psect synopsis output	2	00:00:00.02	00:00:00.02
Cross-reference output	0	00:00:00.00	00:00:00.00
Assembler run totals	584	00:00:10.27	00:00:37.72

The working set limit was 1500 pages.
59540 bytes (117 pages) of virtual memory were used to buffer the intermediate code.
There were 70 pages of symbol table space allocated to hold 1249 non-local and 1 local symbols.
194 source lines were read in Pass 1, producing 13 object records in Pass 2.
15 pages of virtual memory were used to define 14 macros.

```
                              +-------------------------------+
                              ! Macro library statistics !
                              +-------------------------------+

Macro library name                               Macros defined
-------------------                              --------------
-$255$DUA28:[SYSLOA.OBJ]CLUSTER.MLB;1                  1
-$255$DUA28:[SYS.OBJ]LIB.MLB;1                         5
-$255$DUA28:[SYSLIB]STARLET.MLB;2                      5
TOTALS (all libraries)                                11
```

1335 GETS were required to define 11 macros.

There were no errors, warnings or information messages.

MACRO/LIS=LIS$:CJFCLUSTR/OBJ=OBJ$:CJFCLUSTR MSRC$:CJFCLUSTR/UPDATE=(ENH$:CJFCLUSTR)+EXECML$/LIB+LIB$:CLUSTER/LIB